

NEW SPECIES OF NORTH AMERICAN SIPHONAPTERA.

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The insects here described represent the bulk of the indeterminate material that has come to the attention of the author during the past three years. The interest in Siphonaptera is gradually growing and much more attention is being given to the ectoparasites of our wild animals. Owing to the difficulties attending the gathering of fleas from birds, there are practically no bird fleas known from North America, but it is hoped that this deficiency in our knowledge will be satisfied in the near future.

In his classification of the fleas, Oudemans* places the genus *Spilopsyllus* Baker in the family Neopsyllidæ, as the type of a separate subfamily, the Spilopsyllinæ. The genus *Hoplopsyllus* Baker is not placed in the table at all. In order to place *Spilopsyllus* with the Neopsyllidæ, the antenna is characterized as long ("Clava lang"). This is certainly not the case in the antenna of the female and if the condition obtaining in the antenna of the male of a *Neopsylla* is taken into consideration, the male antenna of *Spilopsyllus* can not be called elongate. Therefore, I would relegate the genus to the family Archæopsyllidæ, near *Ctenocephalus* Kolen. The habitus of the genus *Hoplopsyllus* would cause it to be placed nearby. These three genera might be separated in the following manner.

Cephalic ctenidia lacking, pronotal ctenidium present, III coxæ with a comb of spines on the inner side.....*Hoplopsyllus* Baker.

Cephalic ctenidia present.

Club (third segment) of antenna incompletely segmented, that is, the segmental sutures are evident only on the posterior face.

Ctenocephalus Kolen.

Club of antenna with segmental sutures running completely around the organ*Spilopsyllus* Baker.

* "Neue Ansichten über die Morphologie des Flohkopfes, sowie über die Ontogenie, Phylogenie und Systematik der Flöhe," *Nov. Zoöl.*, XVI, 133-158, 1909.

There seems to be no valid reason to retain a separate sub-family for *Spilopsyllus* in its new position.

The species of *Neopsylla* Wagner are divided into three groups* by Rothschild on the basis of the arrangement of the plantar bristles of the fifth fore and mid tarsal segments and on the presence or absence of a row of short spines on the inner surface of the hind coxa. The species described below as new falls into group III. The following table will separate the known males of the species of this group.

Upper lobe of clasper larger than the lower.....	<i>similis</i> sp. nov.
Upper lobe of clasper not larger than the lower.	
Outer margin of finger nearly straight, finger longer than distance from its attachment to tip of lower lobe.....	<i>wenmanni</i> Roths.
Outer margin of finger sinuate so that finger is suddenly wider near middle, finger not longer than distance from its attachment to tip of lower lobe	<i>faceta</i> Roths.

The remaining species in this group, *testor* Roths., is known only from the ♀. It is evidently near to *faceta* Roths.

***Hystrichopsylla schefferi* sp. nov.**

Head.—The frontal notch is small and low down in front. The frons bears two rows of bristles, the upper of nine, running from the base of the antenna to below the frontal notch and the lower of three heavier and longer bristles, from above the middle of the antennal groove to near the base of the maxillary palpi. There are about thirty small hairs scattered over the surface below the upper row of bristles. The eye is represented by a thickening in the chitin. The genal ctenidium is of seven spines, the middle spines much the longer, and occupies about the anterior third of the genal margin. The occiput bears three rows of hairs, the first row of eight small, the second row of eight larger, this row being interrupted between the third and fourth bristles from the antenna and a third row of bristles from the dorsal posterior margin of the head to the lower part of the post gena. Along the posterior margin of the antennal groove are many minute hair-like spines. The rostrum reaches four-fifths the length of the fore coxa.

* Rothschild, N. C., On *Neopsylla* and some allied genera of Siphonaptera, Ectoparasites, I, 30-44, 1915.

Thorax.—The pronotum bears on its posterior margin a ctenidium of 46 spines and also five rows of bristles. The meso- and metanota bear many bristles roughly arranged in seven rows on each. The pleural plates bear a few longer bristles.

Abdomen.—The tergites are thickly set with many bristles, these not arranged in definite rows. The posterior margins of the third, fourth and sixth tergites bear combs of very short and thick spines, the numbers of the spines in the rows being 8, 4, 3. The antepygial bristles are four on each side. Sternites III to VII are heavily armed with many bristles.

Legs.—The fore femur bears on the ventral (posterior) margin proximally a pair of bristles and near by, a single bristle. Distally, there is a row of six bristles which extends across the apex of the femur to the anterior apical angle. The spines of the anterior margin of the fore tibia are in nine groups, the numbers of spines in the groups are as follows: 2, 2, 1, 2, 3, 3, 1, 3, 3. At the posterior apical angle there are two groups of three spines each, the longest spine in the apical group nearly equaling the first segment of the tarsus. First tarsal segment with heavy bristles in eight groups, but as many of the spines are missing in the type and only specimen it is impossible to state the exact number. The plantar bristles of the fifth segment consist of five pairs, all lateral. The armature of the mid and hind legs is essentially like that of the fore leg. The apical row of bristles of the femora contains ten instead of six. The spines of the anterior margin of the mid tibia are grouped as follows: 2, 2, 3, 3, 4, 1, 4, 4, 3, and those of the hind tibia: 2, 2, 3, 3, 3, 1, 3, 1, 3, 3. Both posterior apical rows on the hind tibia have four spines. Plantar bristles as in the fore tarsus. The relative lengths of the tarsal segments are shown by the following table:

Tarsus.	Segments 1-5.				
I	26	15	10	7	15
II	40	25	15	8	20
III	70	55	31	17	23

Modified Segments.—The seventh sternite is produced on the sides posteriorly into a broad, truncate lobe, the base of the lobe is about six times its altitude. There are many heavy bristles on

the sclerite. The eighth tergite is produced posteriorly into a clearly defined triangular process at the apex of which there are several long hairs. Many short hairs are placed along the margin. The stylet is cylindrical, about six times as long as broad and has toward the apex two long bristles and two sense cones. The receptacula seminis are two in number and are similar to the same organs in *H. dippiei* Roths., as figured by Fox.* The appendix is longer in comparison to the body in the present species than in *H. dippiei*, according to Fox's figure.

Length.—6.2 mm. (in a slightly contracted condition).

The type, a female, was taken from the nest of *Aplodontia rufa* Raf. at Puyallup, Washington, by Mr. T. H. Scheffer.

The genus *Hystrichopsylla* Tasch. up to the present contained but one Nearctic species, *H. dippiei* Roths. *H. schefferi* is a much larger species, and is further distinguished from *H. dippiei* by the difference in the number of spines in the pronotal ctenidium, there being thirty-six in the latter and forty-six in *H. schefferi*.

***Stenoponia wetmorei* sp. nov.**

Head.—The frons bears five bristles, three in a vertical row near the margin of the antennal groove and two placed in such a way that they form, with the lowest bristle of the vertical row, a horizontal row beginning near the insertion of the maxillary palpi. On the upper part of the occiput there are four bristles and on the lower, in the posterior angle, there are five. The longest bristle of the second antennal segment equals the length of the third segment. The rostrum is short, equal in length to the maxilla. Eye absent. On the fore gena there is a ctenidium of twelve spines. The genal process is rounded and extends downward a distance equal to the length of the last spine of the ctenidium.

Thorax.—The pronotum bears on the posterior border a ctenidium of about fifty spines. Anterior to this ctenidium there are four rows of about twenty-four bristles each. The meso- and meta-thoraces each bear four rows of numerous bristles. There are about twenty bristles on the mesepisternum, fifteen on the mesepimeron, and four on the metepisternum. On the

* U. S. Pub. Health Service, Hygienic Lab. Bull. 97, Pl. xix, fig. 52.

metepimeron there are two rows of bristles, the anterior one of eleven and the posterior one of fifteen.

Abdomen.—The first abdominal tergite bears a ctenidium of forty spines, similar to the ctenidium on the pronotum. On the II–V tergites there are ctenidia. The spines forming these combs are very short and stout, quite unlike those of the others. The numbers of spines in order are forty, thirty-eight, thirty and twelve. There are also two well-defined rows of bristles on each tergite, with a few minute bristles scattered at random between the rows. The seventh tergite is continued over the pygidium in a long spine and bears at the base of this spine the antepygidial bristles, five on each side. Sternites III–VII bear a few bristles, as follows, the figures being for one side only: 5; 4-4; 3-1-2; 3-10; 5.

Legs.—The spines on the anterior (outer) margin of the tibiae are unusually long and heavy. On leg II, the longest apical spine, situated at the outer angle, exceeds the first and second tarsal segments combined and is longer than the tibia itself. On leg III the longest apical spine is equal to some of the lengths of the first segment and one-third of the second. The apical spine of the first segment of tarsus III is equal to the second segment, while that of segment two equals segments three and four combined. There are four pairs of lateral plantar bristles and a fifth pair placed between the first laterals. The comparative lengths of the tarsal segments are as follows:

Tarsus.	Segments 1-5.				
I	12	9	8	6	12
II	25	14	9	6	14
III	40	27	15	8	14

Modified Segments.—The seventh sternite is narrowed posteriorly. The flaps of the seventh tergite are somewhat rectangular and bear ten bristles on the posterior margin. The eighth tergite bears at the upper part a row of eight heavy bristles, situated directly behind and under the antepygidial bristles. The stylet is short and cylindrical and bears at the apex one long bristle. The body of the receptaculum seminis is spherical. The appendix is of an equal diameter throughout and is curved about the

body, the apex nearly reaching the middle of the body. At the opposite end of the body is a knob-shaped excrescence equal in height to the diameter of the appendix and about twice as broad across the base of attachment.

Length.—4 mm.

Described from one female, collected at Woodridge, D. C., December 3, 1917, off *Peromyscus leucopus noveboracensis* Fischer, by Alexander Wetmore, in whose honor it is named.

Stenoponia, as characterized, heretofore contained three species, the type, *tripectinata* Tirab. from the Mediterranean region, *calestis* Roths. from China and *gigas* Kirby from North America. The species described above is distinguished immediately from *gigas* Kirby by the difference in the genal ctenidium, being fourteen spines in case of *gigas*. The arrangement of bristles on the metepimeron is entirely different, most notably so in the posterior row; in *gigas* there are ten bristles, while in the present species there are fifteen. There are many other minor differences.

Doratopsylla blarinæ Fox, U. S. Pub. Health Ser., Hygienic Lab. Bull. 97, p. 11, pl. IV, figs. 1-3. 1914.

As this species was described from the ♂ only, the following description of the ♀ is offered.

Head.—The frons bears two rows of bristles, each of five. The first, third and fifth bristles of the lower row are very much heavier than the others. The occiput has three rows, the upper of four, the middle of six and the lower of six bristles. There are two small bristles on the posterior margin of the antennal groove. The eye is rudimentary. The last spine of the genal ctenidium is at the anterior edge of the antennal groove. The rostrum extends four-fifths the length of the fore coxæ.

Thorax.—The pronotum bears a ctenidium of sixteen spines, anterior to which is a row of nine bristles. The meso- and meta-nota bear two rows each of bristles. There are eleven bristles on the meso- and meta-pleural sclerites as follows: mesepisternum one, mesepimeron five, metepisternum one, metepimeron four.

Abdomen.—Tergites I-IV each bear at the upper part a pair of short, thick sharp teeth, one on either side of the dorsal median

line of the abdomen. There are also two rows of bristles on each segment. Sternites III-VII bear bristles as follows: 2, 2, 2, 3, 6; the same figures repeated for the opposite side of the insect.

Legs.—The anterior margin of the fore tibia bears six groups of two bristles each. The mid and hind tibiæ have seven groups each, the third group being reduced to one bristle in each case. The longest apical bristle of hind tibia does not reach the apex of the first tarsal segment, but the longest apical bristle on both fore and mid tibiæ exceed the first tarsal segments of those legs. The comparative measurements of the tarsal segments are as follows:

Tarsus.	Segments 1-5.				
I	15	16	14	12	30
II	30	25	18	11	27
III	65	45	30	20	30

Modified Segments.—The seventh sternite is continued posteriorly at the ventral angle and its posterior margin is distinctly sinuate. The process of the eighth tergite is more or less triangular and bears on its superior margin four and on its inferior margin two heavy bristles. At the cephalad end of the inferior margin there is a brush of about six long flexible bristles. The stylet is cylindrical and bears at its apex one stout bristle. The eighth sternite bears eight long bristles and two short spines near the upper margin. The receptaculum seminis is large and oval. The juncture of the appendix with the body is poorly defined, the appendix at the base being the same diameter as the body.

Length.—2 mm.

Specimen described is one of a series of both sexes taken on Plummer Island, Maryland, off *Blarina brevicauda* Say., March 10, 1918, Alexander Wetmore, collector.

Myodopsylla subulata sp. nov.

♂ *Head.*—The entire upper part of the frons is transparent and bears but three minute bristles near the antennal groove. The line of chitinization runs from the base of the posterior genal spine in a gentle curve to the upper fifth of the anterior margin of the antennal groove. On the dark (chitinized) part of the frons there are five stout bristles along the antennal groove

and thirteen minute hairs scattered over the surface anterior to these. The eye is vestigial though visible, low down on the genal process which is sharply pointed behind. At the extreme anterior end of the fore-genæ there are four ctenidial spines, two on each side. The posterior pair are the longer and are curved backward. The rostrum is short, reaching about one-fourth the length of the anterior coxæ. The occiput bears nine bristles on either side and a row on the posterior margin of twelve. This marginal row ends well down on the post gena in a very long and heavy bristle.

Thorax.—The pronotum bears a ctenidium of forty-two spines on its posterior margin. There are about twelve bristles on each side of this sclerite. The mesonotum bears about nine bristles on a side in addition to a posterior marginal row of ten. The metanotum bears ten bristles on a side in addition to a posterior row of sixteen. The mesepisternum bears nine bristles and the mesepimeron three. The mesosternum is protuberant below and bears no bristles. The metepisternum is very small and bears four bristles, while the metepimeron is much larger, bearing nine. The metasternum is similar in form to the mesosternum but is somewhat larger.

Abdomen.—No abdominal tergite bears ctenidial spines. However, dorsally, the bristles of the posterior marginal rows become more numerous and form structures which are analogues of the pronotal ctenidium. The numbers of bristles in these rows for the first seven tergites are as follows: 14, 12, 8, 8, 8, 8, 4. The bristles, other than these on the tergites are as follows: On the first there are nine, arranged in two rows. On the remaining tergites there is one row of large bristles on each, as follows: 4, 6, 5, 6, 6, 5. There are no bristles on Sternite III. Sternites IV–VII bear the following on each side: 3, 3, 3, 6. The antepygidial bristles are one on each side, mounted on conical protuberances.

Legs.—The fore femur bears proximally one and distally two bristles on its ventral (internal) edge. On the dorsal edge, apically there is a prominent curved spinous bristle. The mid and hind femora are similar except that apically on the outer face there are three additional bristles on each. The tibiæ bear, on

outer faces, conspicuous rows of bristles, one on each as follows: 4, 9, 11. The bristles along the anterior margin of the tibiae are partly paired and partly single. There are eight groups on the fore-, eleven on the mid- and twelve on the hind tibiae. The tarsi are quite hairy. The plantar bristles on the fifth segment of all the tarsi are similar. There are four pairs which are strictly lateral. In the interval between the second and third pairs there is a pair slightly displaced toward the median line and between the bristles of the second pair there is a pair still closer to the median line. The comparative lengths of the tarsal segments are as follows:

Tarsus.	Segments 1-5.				
I	6	6	5	3	7
II	15	11	7	4	8
III	21	13	8	4	8

Modified Segments.—The ninth sternite is narrow and bears on the ventral margin numerous bristles, dorsally there are many fine brushlike hairs. The process of the clasper is evenly curved above and below, the process is extended in a narrow rounded lobe at the apex, of which there are six bristles. The exopodite is roughly trapezoidal in shape. The upper proximal corner is produced into a long slender process. The longest diameter of the exopodite measured from the apex of this process has a ratio of 50-32 to the diameter taken at right angles to this.

♀ *Head.*—Similar to the ♂.

Thorax.—Essentially similar to the ♂.

Abdomen.—Sternites III-VII bear the following numbers of bristles: 5, 4, 4, 4, 8. The tergites II-VII bear the following prominent bristles: 3, 3, 5, 5, 5, 4.

Legs.—Essentially similar to the ♂.

Modified Segments.—The seventh sternite is produced a short distance posteriorly. The eighth tergite bears a row of four bristles on its posterior margin. The stylet is cylindrical, of even diameter throughout the basal half, when it is suddenly reduced to about two-thirds the size. It bears at the apex a long bristle and, below this, two shorter ones. The body of the receptaculum seminis is spherical. The appendix is cylindrical and is bent partially about the body.

Length.—♂ 2.03 mm., ♀ 1.97 mm.

6 ♂, 6 ♀ from Hamden, Conn., off *Myotis subulatus* Say., collected January 9, 1915, by the author.

The bat-infesting fleas of the Nearctic region have been badly neglected. Up to the present there have been three species named. The first, *insignis* Roths., off *Myotis lucifugus** was described from Canada (Waterloo, Ontario). The second, *crosbyi* Baker, was very insufficiently characterized and is questionably distinct from *insignis*. The third species, *texana* Fox, is off *Nyctinomus mexicanus* from Texas (Pecos).

The present species is nearest to *insignis*, from which it differs in the shape of the exopodite and in the number of spines in the pronotal ctenidium. Also there are no short teeth on the mesonotum as in *insignis*. The ratio as given above for the exopodite appears to be 50-40 for *insignis*.

Neopsylla similis sp. nov.

Head.—The frons bears two rows of bristles, the upper of five and the lower of four, which are distinctly stouter. The occiput bears three rows, of four, five and three bristles respectively. The upper half of the posterior margin of the antennal groove bears three minute bristles. The rostrum reaches about two-thirds the length of the fore coxa. Eye rudimentary.

Thorax.—The pronotal ctenidium is of 12 rather broad spines; there is also one row of bristles on the pronotum, the most ventral being the longest.

Abdomen.—The tergites bear two rows each of bristles, the anterior row being the heavier. Sternites III-VII bear bristles as follows: 4-8; 4-8; 4-4-9; 8-9; 6-4.

Legs.—The hind coxa bears internally a nearly continuous row of seven short spines, the distal three becoming successively thinner. There are also eight hairs grouped about this comb. On the ventral margin of the mid femur at the proximal end is one bristle and at the distal end there are two, these last being on the outside face. On the ventral margin of the hind femur

* In the original description, the host is cited as *Myodes lucifugus*. As the genus *Myodes* (Muridæ: Microtinæ) would not normally carry fleas of this group, and as the specific name strengthens the case for *Myotis*, I have made the change.

proximally there are four bristles, two outside and two inside, and distally there are two outside. Both the mid and hind tibiae bear two lateral rows of bristles as follows: mid tibia, lateral row nearest dorsals, 6, second row, nearly median, 5; corresponding rows on hind tibia, 6, 5. On both tibiae there is a short row distally just inside the anterior margin of 5 and 6 respectively. The tarsal segments bear the following comparative measurements:

Tarsus.	Segments 1-5.				
I	20	18	13	11	30
II	36	27	16	13	31
III	65	45	30	16	36

The longest apical tibial bristle of the hind leg reaches the apex of the first tarsal segment, but none of the apical bristles of the first or second segments reach the apex of that following. The fifth segment of the anterior and mid tarsi have each four pairs of lateral and additional pair placed between the proximal laterals. The fifth segment of the hind tarsus has but four pairs, all lateral.

Modified Segments.—The eighth sternite bears on each side eleven bristles, of which three are longer and heavier than the others. The process of the clasper is bilobed, the upper lobe nearly twice as long as the lower, which is nearly as long as broad and is truncated parallel with its base. Each lobe bears one heavy bristle near its outer margin. There are about forty smaller hairs on the two lobes. The exopodite bears no heavy bristles, but has about fifteen hairs along its outer margin. Upward it is produced to a rather sharp point. The ninth sternite bears at the apex a row of spines, apparently four in number; however, all are undoubtedly double. Proximally to this row are apparently four more; the first three are double. This last row is continued with a few weaker bristles, three in number.

Length.—1.57 mm. Type in collection of the author.

One ♂ from Lake Burford, N. M., off *Peromyscus* sp., collected May 25, 1918, by Alexander Wetmore.

This species was taken in connection with large numbers of *Ceratophyllus wagneri* Baker, which appears to be an abundant parasite of this host.

Ceratophyllus utahensis sp. nov.

Head.—The frontal notch is high up. There are two rows of three bristles each on the frons, the lower row running from above the eye to the base of the maxilla, the upper from a point midway between the eye and the top of the head and the base of the maxillary palp. There are three minute bristles above the eye and two more, slightly larger, on the anterior margin of the antennal groove near the base of the antenna. The entire head is sparsely but regularly punctured; however, there are no visible hairs arising from these punctures. The eye is very large, overlaps the antennal groove near the upper part and nearly touches the genal margin. Its diameter (vertical) is equal to the length of the third segment of the maxillary palp. The gena behind the eye is sharply pointed. The first segment of the antenna bears numerous small hairs and the hairs arising from the second segment reach the tip of the antenna. On the occiput there are three stout bristles, one appearing as a continuation of the upper row on the frons and two as a continuation of the lower row. There is one large bristle at the lower posterior angle of the occiput and a subbasal row of about ten across the dorsal part.

Thorax.—The pronotum carries a ctenidium of about 26 spines on the posterior margin, and a row of about 12 bristles anterior to this. On the mesonotum there is a submarginal row of 10 bristles and two rows of much smaller bristles before this; on the metanotum the submarginal row is of nine bristles and there are three rows of smaller bristles. On the mesosternum there are two bristles, on the mesopleuræ, five. On the metasternum there is one bristle near the upper posterior corner, the metepisternum bears two and the metepimeron five.

Abdomen.—Tergites I–IV bear near the dorsal line on each side two short heavy teeth. In addition, there are two rows of bristles on each tergite; the numbers for one side only are as follows:

	I	II	III	IV	V	VI	VII
1st row	6	6	7	7	6	6	2
2d row	4	6	6	7	7	6	6

On the first tergite there is one bristle on each side representing a third row. Sternites III–VII bear bristles as follows: 3, 6, 7, 6, 10. The antepygidial bristles are three on a side, the middle bristle very large and strong, while the laterals are so weakly developed as to be hardly visible.

Legs.—On the inside of the hind coxæ there are a few hairs, similar to those in *C. arctomys* Baker. The fore coxa bears numerous bristles on its outer surface. On the mid and hind coxæ the bristles are confined to the distal anterior portion of the outer face. The bristles on the exterior edge of the tibiæ, especially in the case of tibia III, are fewer than usual and none of the apical bristles of tibia III reach the apex of the first tarsal segment. Two apical bristles of tibia II reach the apex of the first tarsal segment of that leg. There is one apical bristle on the third segment of Tarsus III which reaches the apex of the fourth segment. The first segment of tarsus I bears three large bristles on the outer edge. The comparative measurements of the tarsal segments are as follows:

Tarsus.	Segments 1-5.				
I	22	25	20	12	37
II	35	35	25	15	40
III	85	65	38	22	45

Plantar bristles five pairs, all lateral.

Modified Segments.—The eighth tergite has four heavy marginal bristles, and five lateral. The sclerite is sharply emarginate posteriorly. The eighth sternite is prolonged posteriorly and has near the tip a group of five large bristles. There are numerous smaller bristles near the lower margin. The fixed process of the clasper is enlarged near the middle and is then contracted to a blunt apex. The movable process is oblong, rounded at apex, nearly twice as long as the fixed process and bears at the posterior apical angle five thin bristles. At the juncture of the two processes there are the two bristles so often found in this genus. The ninth sternite bears many small hairs. Female essentially similar to the male. The lateral antepygidial bristles are more fully developed in this sex but are less than one-fourth as long as the mid-bristles.

Modified Segments.—The eighth tergite is slightly emarginate near the apical angle. The stylet is about twice as long as thick at the base. The receptaculum seminis is constricted at the juncture of the appendix and the body. The appendix is slightly enlarged near the juncture and then becomes cylindrical. The ventral edge of the body is evenly curved while the dorsal edge is sinuate.

Length.—♂ 2.28 mm. ♀ 2.71 mm.

Locality.—Mouth of Bear River, Utah, off either *Steganopus tricolor* or *Spatula clypeata*, 22 July, 1916, Alexander Wetmore collector. The specimens were taken from a container in which both of the above named birds were imprisoned. Evidence points to *Steganopus* as the true host.

TRAPPING FOR LARVÆ OF APANTESIS.

By CHAS. RUMMEL, Newark, N. J.

On a trip to Lyons Farm, on November 11, 1918, to collect larvæ of *Bellura obliqua*, a sufficient number were secured by cutting off about 60 infested sections of cat-tail. Plants bearing the matured seed stalk or "cat-tail," it has been my experience, are not infested by *B. obliqua*.

With time still to spare search was then made for *Apantesis* larvæ. On a previous visit when a larva of *A. nais* was found in a swampy, wet place, an unusual environment for this species; traps (old paper and other rubbish found near at hand), had been placed on the border of this swamp. Examination of these traps resulted in three larvæ of *A. nais* and four very small ones of a kind not recognized. After adding a number of traps search was continued on the way back toward Newark. About an hour later in an open field six more half-grown larvæ of *A. nais* and one full grown of *A. arge* were found. Here again a number of traps were laid, this time old sheet iron being the material available. If the material used for traps is light, such as paper or pasteboard, it should be weighted down so that the wind cannot blow it away. It is best to crumple paper and secure it between